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EXAMINER

ORWIG, KEVIN S

ART UNIT

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1611

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/528,698 | Applicant(s) FERRARI ET AL. | |
| | Examiner Kevin S. Orwig | Art Unit 1611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 65-69, 71, 72, 74, 76 and 78-147 is/are pending in the application.
- 4a) Of the above claim(s) 137-146 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 65-69, 71, 72, 74, 76, 78-136 and 147 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>9/24/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendments and arguments filed Sep. 24, 2009 are acknowledged and have been fully considered. Claims 65-69, 71, 72, 74, 76, and 78-147 are now pending. Claims 1-64, 70, 73, 75, and 77 are cancelled; claims 65, 66, 71, 72, 74, 78-94, 97-99, 102-107, 111-113, 137, 138, and 143-147 are amended; claims 137-146 are withdrawn. Claims 65-69, 71, 72, 74, 76, 78-136, and 147 are now under consideration.

OBJECTIONS/REJECTIONS WITHDRAWN

The rejections of claim 73 are moot in light of the claim cancellation.

The rejection of claims 65-69, 71-74, 76, 78-136, and 147 under 35 U.S.C. 112, 1st paragraph, lack of written description, is withdrawn in light of the support pointed to by applicant in the response filed Sep. 24, 2009.

The double patenting rejections of record have been withdrawn in light of the terminal disclaimer filed Sep. 24, 2009 and approved Oct. 24, 2009.

OBJECTIONS/REJECTIONS MAINTAINED

The rejection of claims 65-69, 71, 72, 74, 76, 78-136, and 147 under 35 U.S.C. 103(a) over ANTON, FRECHET, and MELCHORS is maintained as discussed below.

Information Disclosure Statement

Applicants' statement in the response of Sep. 24, 2009 regarding four references lined-through on the IDS filed Mar. 10, 2009 is acknowledged. The examiner has searched the file wrapper, but has been unable to locate the references in question. If applicants believe that these references were properly filed, applicants are invited to direct the examiner to their location, for example the specific file in PAIR containing these references, or are encouraged to file a new IDS clearly providing these references. The examiner apologizes for any inconvenience and appreciates applicants' assistance in resolving this issue.

References lined-through on the information disclosure statement filed Sep. 24, 2009 were not considered because they were not provided or were not provided in English.

Claim Rejections - 35 USC § 103 (Maintained)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 65-69, 71, 72, 74, 76, 78-136, and 147 are rejected under 35 U.S.C. 103(a) as being unpatentable over ANTON (U.S. Patent No. 6,153,206; Issued Nov. 28, 2000; Reference # 35 on IDS dated Sep. 21, 2006) in view of FRECHET (U.S. 6,663,855; Filed Oct. 3, 2001; Reference # 65 on IDS dated Mar. 10, 2009) and MELCHORS (U.S. 2002/0151638; Filed Mar. 25, 2002).

1. Anton discloses cosmetic compositions comprising an oil component and a synthetic ethylenic block polymer (abstract; col. 2, lines 9-23; claim 1). Anton teaches that the polymer of the invention comprises portions having a low glass transition temperature (T_g) and portions having a high T_g and teaches that one block is preferably constructed from isobornyl methacrylate (elected species) (col. 4, lines 5-27; Example 1). Anton teaches that the oil component is a volatile or nonvolatile oil (i.e. an organic liquid medium) (col. 6, lines 8-10 and 17-19). Anton teaches that the compositions are useful as transfer resistant lipsticks (col. 1, lines 65-67; Example 1). Anton further

Art Unit: 1611

teaches that the polymer of the invention may be a copolymer, a terpolymer (i.e. a polymer of three different monomers), or have any number of different units in addition to the first and second repeat units (i.e. blocks) (col. 2, lines 58-62; col. 4, lines 28-60). In particular, Anton teaches block terpolymers and teaches that the repeating units are monomer units which are present more than one time in the polymer chain and can be present in either repetitive sequence or in random sequence with other monomer units (col. 3, lines 21-24).

2. Frechet discloses cosmetic compositions comprising linear block copolymers formed by a core polymer surrounded by two or more flanking polymers (abstract; col. 3, lines 52-57). Frechet teaches that the flanking polymers may be different from each other in terms of their composition and/or molecular weight (col. 6, lines 35-37) and teaches that the core and flanking polymers may comprise different monomers or may have one or more monomers in common (col. 6, lines 54-56). Frechet teaches that the T_g value of the core polymer is -200-150 °C (most preferably from -75-50 °C) and is different from that of the flanking polymers, which typically have T_g values of 0-300 °C (more preferably from 30-150 °C (col. 4, lines 21-36). In line with the teachings of Anton, Frechet teaches the importance of the polymers having both hard and soft blocks (col. 4, lines 33-36). Frechet teaches that one or more blocks can be random copolymer blocks and the overall polymer may have a variety of architectures such as A-R-B-A or A-R-B-R-A, where R is a random block of monomers A and B or of monomers B and C or more monomers. Moreover, the random block can vary in composition or size with respect to the overall block copolymer (col. 10, lines 25-44).

Art Unit: 1611

3. Neither Anton nor Frechet discloses the polydispersity of their polymers. It is the examiner's position that it would have been obvious and fully within the purview of one having ordinary skill in the art to control the optimum molecular weight, polydispersity, polymer composition and architectures of the resultant block copolymer product by varying experimental parameters such as source, amount, and solvation of catalyst/initiators/control agents, polymerization temperature and time, etc., as taught by the references referred to by Anton (col. 5, line 64 to col. 6, line 6). Nonetheless, one would have looked to the art to ascertain an acceptable polydispersity value for the polymers. Melchior discloses copolymer compositions with the object of providing coating compositions with high resistance to solvents, water, and environmental influences with very good optical properties (gloss) and mechanical properties (hardness, flexibility), which can be applied in a wide range of fields (paragraphs [0013], and [0037]). Melchior teaches that polydispersity values of 2.9-3.5 are acceptable to achieve the objects of the invention Table 1. Thus, the combined teachings of Anton, Frechet, and Melchior render the claims obvious.

4. Frechet teaches that it is known in the art that the selection of macromers with different physical and chemical properties such as solubility and T_g value is a means to select the desired overall polymer properties (col. 1, lines 25-33). Frechet further teaches that block copolymers are advantageous over graft copolymers since the polymer architecture can be controlled more readily, and that this is particularly important when designing polymers with segments of distinct physical and chemical properties for particular applications (col. 1, lines 48-54). Frechet teaches that the

Art Unit: 1611

polymers can be readily tailored to a particular application by changing the chemical composition (e.g. the types of monomers and their proportions) to optimize the physical properties such as solubility and T_g value (col. 2, lines 44-49; col. 6, lines 13-27).

5. In light of these teachings, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to prepare a linear block polymer arranged with a first block and a second block connected by an intermediate block comprising both types of monomers, to provide a suitable polymer compound. One would have been motivated to do so since the teaching of Anton suggests such an arrangement, and since one of ordinary skill in the art would recognize that including a block comprising monomers from the "hard" and "soft" portions provides an additional means (besides the weight % of each block) to manipulate the overall properties of the polymer, as taught by Frechet. Further, it is well within the skill of ordinary artisan to select the appropriate properties of a copolymer for a given formulation. Therefore if an artisan wanted to produce a polymer with both high flexibility and shine qualities, one would have been motivated to arrange the "hard" and "soft" polymer blocks such that they were connected by an intermediate block as suggested by Anton and taught by Frechet. It is reasonable that a block comprising monomers from each of a "hard" and "soft" block will have a T_g between these two extremes, as would be recognized by the ordinary artisan. For example, Anton teaches that the overall T_g of the polymer lies between that of the isolated "hard" and "soft" segments (abstract; col. 2, lines 13-23). Thus, given the teachings of Anton, Frechet, and Melchior, the instant claims are rendered obvious.

Art Unit: 1611

6. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to formulate a polymer with a core and flanking blocks having different compositions and T_g values as taught by Frechet, to provide a transfer resistant lip makeup composition using isobornyl methacrylate as a preferred monomer as taught by Anton and to formulate the polymer with a polydispersity of 2.9-3.5 as taught by Melchiors. One would have had a high expectation of success given that each of the references are concerned with similar problems in the art, namely providing compositions with desirable cosmetic properties. The skilled artisan, in possession of Anton, Frechet, and Melchiors could have arrived at the instantly claimed invention by no more than routine experimentation. Furthermore, the MPEP states that the selection of known materials based on their suitability for their intended uses is *prima facie* obvious. "Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle." 325 U.S. at 335, 65 USPQ at 301. See MPEP § 2144.07. In the instant case, applicants are claiming a combination of known monomers, all of which are taught by Anton and Frechet, for the same purpose as that which has been taught in the art.

7. Anton does not measure the "resistive index" of the compositions. It is noted that "resistive index" is a measurement of the transfer resistance of the composition as evidenced by paragraphs [0014]-[0026] of the instant specification, wherein a sample of the composition (on a support) is pressed onto white paper and moved through deposits of oil and water and the deposit remaining on the support is measured after this process. While Anton does not measure the transfer resistance of the compositions in

Art Unit: 1611

such a specialized assay, it is an object of Anton's lipstick compositions to provide high transfer resistance (col. 1, line 65 to col. 2, line 3; Example 1). Thus, it is reasonable that the transfer resistant lipstick compositions taught by Anton (e.g. Example 1) would have this property. Furthermore, since the object of Anton's invention is to provide high transfer resistance, it would be obvious to an artisan to formulate the compositions with maximal transfer resistance, or "resistive index".

8. The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics. When, as here, the prior art appears to contain the exact same ingredients and applicant's own disclosure supports the suitability of the prior art composition as the inventive composition component, the burden is properly shifted to applicant to show otherwise.

9. Regarding the limitations "styrene-free" in claims 65 and 114, and the limitation "non-elastomeric" in claims 66 and 119, Anton teaches styrene-free transfer resistant lipsticks (Example 1) and teaches the use of the same monomer components of the block polymers as those instantly claimed. Thus, the compositions of Anton are both styrene-free and non-elastomeric.

10. Regarding claim 69, Anton does not disclose the solubility of the block polymers, but teaches the use of the same monomer components of the block polymers as those instantly claimed (see below). Therefore, it is reasonable that the polymers taught by Anton will not be soluble at an active material content of at least 1% by weight in water, and thus meet the limitations of claim 69.

Art Unit: 1611

11. Anton teaches that the molecular weight average of the polymer is from 5,000 to 300,000, but is preferably from 5,000 to 50,000 (col. 5, lines 23-28). Anton exemplifies a composition comprising a polymer having a molecular weight of 27,100 (Example 1), reading on instant claims 115-118.

12. Anton teaches that the preferred compositions comprise from 3-30% of the copolymer (col. 11, line 10), and embodies the copolymer in the range of 19-20% by weight of the composition (Example 1), reading on claims 120 and 121.

13. As discussed above, Anton teaches that the oil component is a volatile or nonvolatile oil and exemplifies 6% isododecane in the transfer resistant lipstick composition (Example 1), reading on claims 122-124.

14. Anton also teaches that the nonvolatile oil may be a hydrocarbon-based oil (col. 7, lines 44-45) or nonvolatile silicone oil (col. 7, line 54-67). Anton exemplifies 8% of the nonvolatile oil fluoro octyldodecyl meadowfoamate (Example 1), reading on claims 126-128.

15. Anton teaches that the preferred compositions of the invention comprise 1-30% of a wax (col. 9, lines 41-49; col. 11, lines 8-21), and exemplifies a composition comprising 7% synthetic wax (Example 1), reading on claims 130-132.

16. Anton also teaches that the compositions include dyestuffs (col. 9, lines 17-20; see Example 1, wherein D&C and FD&C lakes are dyestuffs), reading on claim 133.

17. Anton teaches that it is desirable to add other ingredients such as preservatives, antioxidants, vitamins, emulsifiers (i.e. surfactants) and the like (col. 11, lines 5-7). Furthermore, Anton teaches that the compositions most preferably contain additional

Art Unit: 1611

shine enhancers, which are polymers with high refractive index (col. 11, lines 22-24) and exemplifies compositions containing fragrances (Example 1), reading on claim 134.

18. Anton teaches the composition in the form of an anhydrous stick (col. 2, lines 24-36 and 40-42; claim 19), reading on claims 135 and 136.

19. Anton teaches that the first repeat unit has a T_g of about $-10-75^{\circ}\text{C}$ and the second repeat unit has a T_g of about $76-120^{\circ}\text{C}$ (abstract; col. 4, line 62 to col. 5, line 1). Specifically, Anton embodies a polymer comprising blocks of isobornyl methacrylate ($T_g = 110^{\circ}\text{C}$) and isobutyl methacrylate ($T_g = 53^{\circ}\text{C}$) (Example 1) and teaches that a variety of other monomers are useful in the polymers, for instance n-butylmethacrylate ($T_g = 20^{\circ}\text{C}$), hexyl methacrylate ($T_g = -5^{\circ}\text{C}$) (col. 3, line 56 to col. 4, line 38; col. 5, lines 33-54, see the second table in col. 5). Thus, it would be obvious to an ordinary artisan to use any combination of these monomers.

20. Regarding claim 74, Anton does not disclose the compatibility of the various polymer blocks, and does not disclose the solubility of the blocks in the major organic liquid medium of the composition, which is how mutual incompatibility is defined in the instant specification (paragraph [0042]). Nonetheless, since Anton discloses substantially the same composition to that instantly claimed, including the same types of monomers, and blocks thereof, it is reasonable that these blocks are mutually incompatible as defined in the instant specification. Thus, claim 74 is rendered obvious by Anton, Frechet, and Melchior.

21. Anton teaches that relative to the polymer, the portions of the first and second repeat units can vary from 2-99% by weight of the first repeat unit to 1-98% by weight of

Art Unit: 1611

the second repeat unit and vice versa (col. 5, lines 3-32). Thus, it would be obvious to an ordinary artisan to use any percentage within this range for each of the blocks. As discussed above, both Anton and Frechet teach that manipulating the percentages of the blocks alters the properties of the final polymer. Thus, the skilled artisan would be motivated to do so to optimize the properties of the polymer for a particular formulation. Therefore, the combination of Anton, Frechet, and Melchior renders claims 79-82, 84, 85, 87, 88, 90, and 91 obvious.

22. Anton teaches a variety of monomers useful for the various polymer blocks of the polymer (col. 3, line 56 to col. 4, line 27; second table in col. 5). In particular, Anton teaches 2-ethylhexylmethacrylate ($T_g = -10^\circ\text{C}$), which is encompassed by the formulas of methacrylates (i.e. alkyl acrylates) recited in instant claims 100 and 101. As stated above, it would be *prima facie* obvious to an ordinary artisan to use any combination of these monomers as defined by the teachings of Anton, rendering claims 100 and 101 obvious. Furthermore, as discussed above, Anton teaches block terpolymers and teaches that the repeating units are monomer units which are present more than one time in the polymer chain and can be present in either repetitive sequence or in random sequence with other monomer units (col. 3, lines 21-24). Furthermore, Anton describes polymer architectures comprising homopolymeric blocks (col. 4, lines 28-60), as does Frechet. Thus, it would have been obvious to an ordinary artisan to produce a polymer having homopolymeric blocks of any of the monomers taught by Anton, such as 2-ethylhexylmethacrylate, rendering claims 102 and 103 obvious.

Art Unit: 1611

23. As stated above, Anton teaches n-butylmethacrylate ($T_g = 20^\circ\text{C}$) in addition to other monomers useful in the blocks of the invention in addition to isobornyl methacrylate (col. 3, line 56 to col. 4, line 38; col. 5, lines 33-54, see the second table in col. 5), thus claim 104 is obvious over Anton, Frechet, and Melchior.

24. Anton teaches block polymers of various configurations containing blocks of differing T_g values. Anton teaches (and exemplifies) polymers wherein one block comprises isobornyl methacrylate, which has a high T_g (Example 1). The other block may comprise monomers that, if polymerized, have much lower T_g values. These other monomers include 2-ethylhexylmethacrylate ($T_g = -10^\circ\text{C}$). As discussed above, per the teachings of Frechet (and in-line with those of Anton), it would have been obvious to produce a block polymer having a block A comprising isobornyl methacrylate, a block B comprising 2-ethylhexylmethacrylate, and an intermediate block comprising each monomer. This type of polymer encompasses that claimed in instant claims 105 and 106.

25. Regarding claims 107 and 108, it is noted that Applicants have elected the species acrylic acid and have stated that this species reads on claim 108. Since acrylic acid does not contain a silicon atom, it is therefore presumed that acrylic acid is a hydrophilic monomer. Anton teaches a variety of monomers useful for the various polymer blocks of the polymer (col. 3, line 56 to col. 4, line 27; second table in col. 5). As stated above, it would be *prima facie* obvious to an ordinary artisan to use any combination of these monomers as defined by the teachings of Anton. Furthermore, as discussed above, Anton teaches block terpolymers and teaches that the repeating units

Art Unit: 1611

are monomer units which are present more than one time in the polymer chain and can be present in either repetitive sequence or in random sequence *with other monomer units* (col. 3, lines 21-24). Furthermore, Anton describes polymer architectures comprising at least three different monomers (col. 4, lines 28-60) and teaches that the final polymer may contain, in addition to the first and second repeat units, other monomeric units such as ethylenically unsaturated monomer units and silicon repeat units. Thus, it would have been prima facie obvious to an ordinary artisan at the time of the invention to include such an additional monomer (in addition to isobornyl methacrylate and, for example 2-ethylhexylmethacrylate), in the polymer as taught by Anton. While Anton teaches methacrylic acid and esters thereof, acrylic acid itself is not disclosed.

26. However Frechet discloses that both methacrylic acid and acrylic acid are highly preferred monomers in the block polymers of the invention (col. 7, lines 6-9; col. 8, lines 8-10 and 58; col. 9, line 15). One of ordinary skill in the art would be motivated to substitute acrylic acid for methacrylic acid due to the similarities of these compounds and since Frechet establishes them as functional equivalents. Thus, the artisan would have a high expectation of success by substituting one functional equivalent for another, rendering claims 107-110 and 112 obvious.

27. While Anton does not disclose the weight % of the additional monomer relative to the first and/or second blocks, it is the examiner's position that it would be well within the skill of the ordinary artisan to adjust the amount of the additional monomer based on the teachings of Anton (see upper table in col. 5). One would be motivated to adjust the

Art Unit: 1611

amount of the additional monomer for the reasoning presented above regarding the intermediate block, which is to achieve the optimal and desired properties of the polymer through manipulation of the types and configurations of the monomers therein as taught by both Anton and Frechet. Thus, claim 111 is obvious over these references.

28. Anton teaches block terpolymers and teaches that the repeating units are monomer units which are present more than one time in the polymer chain and can be present in either repetitive sequence or in random sequence with other monomer units (col. 3, lines 21-24). Furthermore, Anton describes polymer architectures comprising homopolymeric blocks (col. 4, lines 28-60), as does Frechet (col. 4, structures 1 and 2). Thus, it would have been obvious to an ordinary artisan to produce a polymer having homopolymeric blocks of any of the monomers taught by Anton, as well as the functional equivalents taught by Frechet, such as acrylic acid, rendering claims 113 obvious.

29. Anton teaches that the preferred composition comprises a volatile oil in the range of 10-40% (col. 11, lines 8-21). Thus, it would be obvious to use a volatile oil in this range as taught by Anton, rendering claim 125 obvious. Anton teaches that the preferred composition comprises a nonvolatile oil in the range of 10-30% (col. 11, lines 8-21). Thus, it would be obvious to use a nonvolatile oil in this range as taught by Anton, rendering claim 129 obvious.

Art Unit: 1611

30. Regarding new claim 147, Frechet teaches that isobutyl acrylate is a preferred monomer component in addition to acrylic acid (col. 8, lines 10 and 65-66; col. 9, lines 38-39). In combination, Anton, Frechet, and Melchiors render claim 147 obvious.

Regarding the obviousness rejections herein, it is noted that a reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, in the absence of evidence to the contrary, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

Response to Arguments

Applicants' arguments have been fully considered but are not persuasive. Applicants argue that the segment(s) joining the blocks taught by Anton is not a random block (response, p. 27).

Applicants are reminded that the only structural limitation currently required of the intermediate segment is that it contain a monomer from each of the flanking blocks. Further, as admitted by applicants, Anton teaches block polymers of varying

Art Unit: 1611

architectures. The central segment of a block copolymer such as that taught by Anton (IIIIIIIBBBBBBB) can be construed as a random block. For example, any of the segments that connect the IIIIII, BBBBB, and/or M MMM blocks can be considered random copolymers, for example, IIIIBBB, IIBBB, IIBBB, IIBBB, IBBBBBM, etc. Applicants are invited to explain precisely how any of these segments do not qualify as random copolymers that meet the instant claim limitations. A random copolymer is, by definition, random. Therefore, by random chance, any of -IB-, -IIBB-, -IIBB-, -IBBB-, -IBBBBBBM- could result. Furthermore, applicants designation of an intermediate block, as claimed, is completely arbitrary. The mere recitation that a block is random, cannot, by definition, exclude these structures because randomness encompasses all of these possibilities. These intermediate segments meet the instant claim language, which is extremely broad and places virtually no structural limitations on the intermediate segment. If applicants intend a different structure, the scope of the claim should be amended to reflect this.

Applicants argue that Anton does not expressly discuss the T_g for any blocks (response, p. 27).

This is not true. As admitted by applicants, Anton teaches the T_g of monomers if polymerized. Additionally, Anton exemplifies homopolymeric blocks as admitted by applicants (see response, p. 27, bottom; and Anton, Table in col. 4). Anton embodies a polymer comprising blocks of isobornyl methacrylate ($T_g = 110^\circ\text{C}$) and isobutyl methacrylate ($T_g = 53^\circ\text{C}$) (Example 1) and teaches that a variety of other monomers are useful in the polymers, for instance n-butylmethacrylate ($T_g = 20^\circ\text{C}$), hexyl methacrylate

Art Unit: 1611

($T_g = -5^\circ\text{C}$).

Applicants argue that all of the blocks of the polymers listed in the table in col. 4 have T_g values over 40°C (response, p. 27).

Applicants are ignoring the totality of Anton's teachings. Anton teaches that a second block of the polymer is constructed from monomers, which when polymerized have a glass transition temperature, T_g of -10 to 75°C . Since the artisan reading Anton (alone or in combination with Frechet) would envision homopolymeric blocks, blocks having T_g of -10 to 75°C are fully within the scope of Anton's disclosure. Also, see Frechet. Moreover, the above arguments attack Anton individually. In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Because a "random copolymer" does not exclude this structure, Anton itself reads on the claim. However, Frechet teaches another version (in addition to Anton) of the instantly claimed structure. Frechet clearly teaches the instant structure of the intermediate block along with the claimed T_g values (see paragraph 2 *supra*).

Applicants argue that Frechet teaches for ABA copolymers, the block B has a T_g of less than that of the flanking blocks A (response, p. 28). Applicants assert that because Frechet is allegedly silent as to the T_g of R, the intermediate block does not have a T_g as instantly claimed. Applicants also argue that Frechet does not describe how to make the polymers, suggesting that the skilled artisan would be unable to do so

Art Unit: 1611

(response, p. 29).

In this argument, applicants focus on one embodiment taught by Frechet, the ABA type architecture, and ignore Frechet's other teachings. However, for this one embodiment Frechet actually states, "Typically, this means that the T_g of the flanking polymers will be higher than that of the core polymer." Thus, even in this embodiment, which is different from the other embodiments taught by Frechet, the T_g configuration is not absolute. Regardless, this argument is moot since Frechet teaches configurations other than ABA type polymers.

Applicants are reminded that a reference is good for all it teaches and is not limited to preferred embodiments or examples. The totality of Frechet's teachings clearly encompass the instantly claimed polymer architecture and T_g values as discussed above. Frechet teaches that the flanking polymers may be different from each other in terms of their composition and/or molecular weight (col. 6, lines 35-37) and teaches that the core and flanking polymers may comprise different monomers or may have one or more monomers in common (col. 6, lines 54-56). Frechet teaches that the T_g value of the core polymer is -200-150 °C (most preferably from -75-50 °C) and is different from that of the flanking polymers, which typically have T_g values of 0-300 °C (more preferably from 30-150 °C) (col. 4, lines 21-36). In line with the teachings of Anton, Frechet teaches the importance of the polymers having both hard and soft blocks (col. 4, lines 33-36). Frechet teaches that one or more blocks can be random copolymer blocks and the overall polymer may have a variety of architectures such as A-R-B-A or A-R-B-R-A, where R is a random block of monomers A and B or of

Art Unit: 1611

monomers B and C or more monomers. Moreover, the random block can vary in composition or size with respect to the overall block copolymer (col. 10, lines 25-44).

Moreover, Applicants have provided absolutely no evidence to support their assertion that the T_g of the intermediate segments taught by Frechet (or Anton) would not have a T_g as instantly claimed nor has any evidence been provided to support the implication that an artisan would not know how to make the polymers taught by Frechet. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. In light of the teachings of Anton, (i.e., that the overall T_g of the polymer lies between that of the isolated "hard" and "soft" segments), it is expected that the random block of Frechet (or the intermediate segment of Anton will have the claimed T_g values). Additionally, there are no claim limitations regarding the process required to make the claimed polymers.

Applicants argue that some monomers taught by Mougin and Frechet would yield unpredictable results in terms of polydispersity.

Applicants state that the various examples of Melchioris have different properties based on monomers and production processes. Applicants have not established that these differences are due to the polydispersity of the resultant polymers, and Melchioris

Art Unit: 1611

does not teach this. MPEP 2144.08 states "However, obviousness does not require absolute predictability, only a reasonable expectation of success, i.e., a reasonable expectation of obtaining similar properties." All of Melchoir's polymers disclosed in both tables 1 and 2 (i.e. examples 1-4 of Table 1, and 9-12 of Table 2) have polydispersities of greater than 2.5, and all of these examples have excellent solvent resistance, hardness, and gloss. Melchior's clearly establishes a reasonable expectation of success even if, *in arguendo*, some unpredictability is apparent. Again, no actual evidence has been presented to establish that any of the monomers of Anton or Frechet would be unpredictable as applicants assert.

Summary/Conclusion

Claims 65-69, 71, 72, 74, 76, 78-136, and 147 are rejected; claims 1-64, 70, 73, 75, and 77 are cancelled.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1611

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S. Orwig whose telephone number is (571)270-5869. The examiner can normally be reached Monday-Friday 7:00 am-4:00 pm (with alternate Fridays off). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Landau can be reached Monday-Friday 8:00 am-5:00 pm at (571)272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin S Orwig/

/David J Blanchard/
Primary Examiner, Art Unit 1643